PROJECTOR

ENCL #2 TO SAPC 11041 COPY 1 OF 2

DRIFT SIGHT TEST
PROGRAM B

Purpose:

To establish usefulness of timing device for measuring tracking rate over a fixed, known angle.

General Method:

An auxilliary method, independent of scan tracking, is proposed for measuring the IMC rate. The method consists of measuring the time passage of a ground object through a fixed angle represented by two lines in the Drift Sight reticle. The device required by the auxilliary method is breadboard construction for attachment to an existing Hand Control and is for test purposes only.

Equipment Required:

1. Vehicle with periscope (Drift Sight) removed.
2. Replacement of existing reticle with special reticle furnished by manufacturer. (not a necessity)
3. Re-installation of Drift Sight in vehicle.
4. A2 configuration (vertical camera only)
   a.) 250' film in vertical camera.
   b.) 500' Tracking Camera film.
   c.) Red filter on 24" f/8 camera.
   d.) Yellow filter on Tracking Camera.
5. Century recorder connected to tracking rate potentiometer of Hand Control, accurate time generator and shutter pulse channels.
6. Pilot trained in operational use of Drift Sight with the "black box" attachment to the Hand Control.
7. Hand Control and attached timing device ("black box") as supplied by manufacturer.
8. Installation and boresighting of Hand Control by manufacturer's representative.

Conditions of Test:

Duration: 2 hours. One hour at each altitude.
Flight plan: Over cloudless area between 9 a.m. and noon, local time.
Altitude: K plus 10 and K plus maximum.

Pilot Briefing:

1. Turn on Tracking Camera at takeoff.
2. After reaching altitude select area clear of clouds.
3. Turn on autopilot.
4. Set Drift Scale so line is parallel to ground track.
5. Maintaining straight and level flight (at altitude of K plus 10), set tracking rate of Hand Control as follows: (with Alpha, Beta equal to zero, looking straight down)
   a.) With fingers rotate knob until red light extinguished and have rotated <u>firmly</u> against stop.
   b.) Set Hand Control so Drift Sight is looking straight down, with no left-right obliquity (set into detent position).

ENCL #2
SAPC 11041
COPY 1 OF 2

c.) Observe object on Drift Sight (at X.4 power). At instant object passes upper reticle line depress button. At instant same object passes lower reticle line (not line of square box) depress button again.
d.) Repeat (c.) twice more. A red light will light some moments after third run start to indicate that last run is in progress.

6. Turn on configuration cameras and maintain straight and level flight for three minutes.
7. Turn configuration cameras off (leave Tracking Camera on).
8. Record: IAS, altitude, time, compass heading, drift angle.
9. Make 240° right turn and fly straight course which is 120° from first course, (second leg of a triangular course).
10. Repeat steps 4 thru 8.
11. Make another 240° right turn and fly straight course (third leg of triangular course).
12. Repeat steps 4 thru 8.
13. Go to maximum altitude and repeat 4 thru 12.

Preflight Conditions:

1. Load vertical camera of A2 configuration with minimum of 250 ft. film.
2. Load Tracking Camera and set exposure and scan interval per instructions established at loading time.
3. Use red filter on 24" f/8 camera.
4. Use 500' roll of 70 mm. film in Tracking Camera.
5. Make sure clocks in all cameras are synchronized, set, wound and marked. Synchronize with pilot's cockpit clock.
6. Ensure that recorder and timing generator installed, connected and functioning.
7. Perform standard preflight checkout.

Post Flight Condition:

1. Perform standard post flight checkout.
2. Process film from A2 vertical camera and from Tracking Camera.

Analysis:

Refer to "Drift Sight Test Program A."

TWM
11/8/56